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BEFORE THE
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, D.C. 20590

Notice of Proposed Rule Making	)	
Licensing and Safety Requirements for Launch, 14 CFR Parts 413, 415, and 417	)	**Docket No. FAA-2000-7953 -20**

COMMENTS OF SEA LAUNCH COMPANY, L.L.C.

Sea Launch Company, L.L.C. ("Sea Launch") hereby submits comments in response to the Federal Aviation Administration's ("FAA") Notice of Proposed Rule Making on Licensing and Safety Requirements for Launch, Docket Number FAA-2000-7953, dated October 25, 2000 ("NPRM"). In addition to these comments, Sea Launch's views are further reflected in the industry comments prepared collectively by Sea Launch, Boeing (Delta), Lockheed Martin, International Launch Services, and Orbital Sciences Corporation ("Industry Comments"). The Industry Comments state the launch industry's concerns with the effects of the NPRM on U.S. launch service providers in general. The comments hereby submitted provide Sea Launch's overall views on the NPRM. A detailed discussion of Sea Launch's specific concerns is provided in the attached Matrix.

1. Background

Sea Launch is an international commercial space venture formed to launch commercial satellites. The participants in Sea Launch are Boeing Commercial Space Company of the United States, RSC Energia of Russia, KB Yuzhonoye and PO Yuzhmash of Ukraine, and Kvaerner Sea Launch Limited of Norway. Sea Launch's launches take place from the east-central Pacific Ocean at 0° latitude and 154° West longitude.

Sea Launch has received FAA licenses to launch commercial satellites pursuant to 49 U.S.C. Subtitle IX – Commercial Space Transportation, ch. 701, Commercial Space Launch Activities, 49 U.S.C. § 70101 *et seq.* ("CSLA"), and 14 C.F.R. Part 415, Subpart F. Under the current Subpart F, the FAA issues a safety approval to a license applicant proposing to launch from a Non-Federal Launch Site when the FAA "determines that the launch demonstrates an equivalent level of safety to that provided by a launch from a federal launch range . . . ."[1] Sea Launch first received a license from the FAA in March 1999, and has since conducted six launches without any incident to public safety.

2. Comments on the NPRM

Below are comments of Sea Launch on NPRM Part 415, Subpart F ("Revised Subpart F") and Part 417 ("Revised Part 417"). As stated below, and detailed in the attached Matrix, the proposed requirements would impact Sea Launch's ability to do business as a commercial launch services provider. These detailed requirements would significantly limit the company's flexibility in the implementation of safety requirements, which, in turn, would impact Sea Launch's ability to compete in an industry that is trending toward reduced integration cycles. In addition, the requirements would add significant cost to the Sea Launch operation and licensing process. Sea Launch proposes alternative

1 14 C.F.R. § 415.91 (2000).

language and approaches and, in some cases, recommends that the requirements instead be provided as guidelines, and not regulations.

2.1. NPRM Part 415, Revised Subpart F

Revised Subpart F applies to launches taking place from Non-Federal Launch Sites and thus applies to Sea Launch. It contains detailed requirements launch license applicants must meet as part of the FAA's safety review in cases where the launches take place from a Non-Federal Launch Site.

As a U.S.-licensed launch provider whose launches always take place from a Non-Federal Launch Site, Sea Launch has a particularly significant interest and important stake in Revised Subpart F. Indeed, the requirements imposed in Revised Subpart F will determine the regulatory environment in which Sea Launch will have to operate for the foreseeable future. Needless to say, regulatory requirements greatly influence a company's ability to do business and attract customers. This is particularly true in a fiercely competitive industry, such as the space launch industry.

Some of the requirements in Revised Subpart F are unduly burdensome. As detailed in the attached Matrix, requirements for data, information, reports, plans, analyses, reference materials, and updates impose a substantial burden on the launch license applicant/operator. For example:

- In proposed Section 415.113, Launch Personnel Certification Program, subsection (b), the launch applicant's safety review document "must contain a copy of any program documentation used to implement the personnel certification program." Sea Launch proposes instead that the applicant be required to maintain a copy of any program documentation and make it available for review.

- Proposed Section 415.119, Launch Plans, subsection (j), Local Agreements and Plans, provides that an applicant's safety review document "must contain any

agreements and plans with local authorities at or near a launch site whose support is needed to ensure public safety during all launch processing and flight activities." Sea Launch is regulated by several U.S. and foreign regulatory entities, and meeting this requirement would be particularly burdensome. Rather, Sea Launch proposes to submit a list of regulatory agencies involved.

- Proposed Section 415.121, Launch Schedule and Points of Contact, subsection (a), provides that an applicant's safety review document "must contain a launch schedule that identifies each test, review, rehearsal, and safety critical preflight operation to be conducted for each launch . . . ." Sea Launch proposes instead that an applicant be required to provide a top-level launch schedule, because schedules change daily, and detailed schedules are 10-20 pages.

- Proposed Section 415.131, Flight Safety System Crew Data, requires that the applicant's safety review document "identify each flight safety system crew position and the role of that crew member during launch processing and flight of a launch vehicle." Moreover, the document "must identify the senior flight safety official by name . . . ." Sea Launch believes that the individual's name should not be included in the safety review document, only the qualifications.

The requirements of Revised Subpart F are particularly onerous for launch operators relying on foreign technology, such as Sea Launch. As detailed in the attached Matrix, the information requirements are especially problematic for Sea Launch as it relies on foreign partners and foreign technology. The information required, such as reference materials under Section 415.103(c), is not always readily available. First, U.S. export controls restrict Sea Launch's ability to request and discuss with its foreign partners the information required. Second, Sea Launch's foreign partners are subject to export restrictions imposed by their respective governments. Stricter export controls, in the case of Russia, where one of Sea Launch's partners resides, were encouraged by the United States in conjunction with Russia joining the Missile Technology Control Regime.[2]

The U.S. National Space Policy supports international cooperative space ventures, such as Sea Launch. The policy provides that a goal of the U.S. space program is to

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2 Under a U.S.-Russia Memorandum of Understanding on the export of missile equipment and technologies, signed in September 1993, Russia agreed to: 1) adhere to the export guidelines of the Missile Technology Control Regime; and 2) establish a consultative mechanism with the USG over missile exports of mutual concern.

"[p]romote international cooperation to further U.S. domestic, national security, and foreign policies."[3] The requirements of the NPRM would have the effect of inhibiting such cooperation.

The detailed requirements contained in Revised Subpart F undermine the goals of the CSLA. The purpose of the CSLA is to "encourage the United States private sector to provide launch vehicles . . . and associated services by – (A) *simplifying and expediting* the issuance . . . of commercial licenses . . . ."[4] The detailed requirements imposed by Revised Subpart F would complicate and delay the issuance of a launch license. In adopting the CSLA in 1984, Congress encouraged minimal regulation of the launch industry. It stated that "providing launch services . . . by the private sector . . . would be facilitated by stable, *minimal*, and appropriate regulatory guidelines that are fairly and expeditiously applied."[5] Sea Launch respectfully queries whether Revised Subpart F can be deemed to contain "minimal" regulatory guidelines.

Complex and lengthy regulatory requirements are inconsistent with Department of Transportation Order, DOT 2100.5 (May 22, 1980) ("Order"). The Order, which is applicable to the FAA,[6] provides that a policy objective shall be to "simplify" regulations.[7] A regulation "should not be issued . . . unless it is based on a well-defined need . . . ,"[8] according to the Order. Moreover, states the Order, a regulation "should be as short and uncomplicated as possible."[9] Finally, the Order requires that a regulation provide a "feasible and effective means for producing the desired results" and that it not impose "an unnecessary burden . . . ."[10]

As suggested in the attached Matrix, the detailed requirements in Revised Subpart F should be provided as guidelines, not regulations. Some of the requirements in Revised

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3 National Space Policy, PDD-NSC-49/NSTC-8, Fact Sheet (Sep. 19, 1996), at 1.

4 49 U.S.C. § 70101(b) (emphasis added). The CSLA legislative history emphasizes that the purpose of the then proposed CSLA is to "simplify and expedite the process of licensing commercial launch operations . . . ." *Commercial Space Launch Act*, H.R. REP. NO. 88-816 (1984), at 7.

5 49 U.S.C. § 70101(a)(6) (emphasis added).

6 Policies and Procedures for Simplification, Analysis, and Review of Regulations, Order, DOT 2100.5 (May 22, 1980), sec. 3.

7 *Id.*, sec. 7.

8 *Id.*, sec. 7(a).

9 *Id.*, sec. 7(c).

10 *Id.*, sec. 7(e).

Subpart F are inherently not suitable for regulations. Stating these requirements in the form of guidelines would preserve some measure of flexibility in their application, which is necessary in a fast-paced, highly competitive industry, such as the space launch industry.

2.2. NPRM Part 417, Launch Safety

Revised Part 417 prescribes in great detail the safety responsibilities of launch operators and applies to all expendable launch operators, whether they are launching from a Federal range or a Non-Federal Launch Site. Accordingly, Revised Part 417 would apply to Sea Launch. Revised Part 417 also applies to Sea Launch via references provided in Revised Subpart F.

Some of the requirements imposed by Revised Part 417 would also be unduly burdensome for Sea Launch. Revised Part 417 contains detailed design, testing, analysis and operations requirements, which in their rigid nature limit Sea Launch's ability to apply and improve safety measures designed to protect the public. For example, under proposed Section 417.111, the launch operator shall provide the FAA with a "console for monitoring the progress of the countdown and communication on all channels of the countdown communications network." The launch operator "shall ensure that the FAA is polled over the communications network during the countdown to verify that the FAA has identified no issues related to the launch operator's license." Polling the licensing agency for a "Go/No Go" decision in the last seconds of the launch countdown is not standard control room procedure, and could result in substantial additional and unnecessary cost.

Moreover, launch operators using foreign technology, such as Sea Launch, are disadvantaged under Revised Part 417. In particular, Sea Launch will make use of a so-called "alternate flight safety system," under Section 417.107. An alternate flight safety system is described as a system that does not satisfy all of the requirements of Revised Part 417, Subpart D. An alternate system is permitted if the launch operator demonstrates "clearly and convincingly that the proposed launch achieves a level of safety that is *equivalent* to satisfying all the requirements of [Part 417, Subparts B and D]."

While the "equivalence" standard would suggest that an alternate flight safety system that meets the equivalent level of safety as the system satisfying Subpart D would be acceptable, this appears not to be the case. The FAA proposes what are in essence additional criteria. For example, Section 417.107(a)(3)(i) requires the launch operator to "demonstrate that the launch presents significantly less public risk" than for conventional systems. While Sea Launch's launches present less risk to the public, the uncertainty introduced by the regulatory requirement for "significantly less" risk is troublesome, as that term is not defined. Because there is no clear standard, licensing the Sea Launch system may become onerous and time consuming, having the effect of driving customers to other launch providers.

Furthermore, under Section 417.107(a)(3)(ii), the FAA may "impose additional design, test and operational requirements" for alternate flight safety systems. Such requirements, in particular for design, are especially problematic in the case of Sea Launch, whose flight safety system is supplied by a foreign partner. It would require export licenses for defense services relating to design improvement for MTCR Annex Items, which the U.S. State Department traditionally has been reluctant to grant.

Needless to say, in a highly competitive marketplace such as the global market for launch services, any regulatory disadvantage can be detrimental. Accordingly, Sea Launch proposes that the FAA's "equivalence" test not be accompanied by additional regulatory criteria. The criteria should be provided in guidelines only.

Sea Launch recognizes and supports the FAA's mandate to protect public health and safety and the safety of property. At the same time, Sea Launch believes the mandate should be exercised only to the extent necessary. When adopting the CSLA, Congress emphasized that the United States should "encourage private sector launches . . . and, *only to the extent necessary*, regulate those launches . . . to ensure compliance with international obligations of the United States and to *protect public health and safety, safety of property,* and national security and foreign policy interests of the United States."[11] Sea Launch respectfully queries whether all of the safety requirements of Revised Part 417 are necessary to protect public health and safety and safety of property, particularly for launches taking place in international waters, hundreds of miles from inhabited territories.

As suggested in the attached Matrix, the requirements in Revised Part 417 should be provided as guidelines, not regulations. Some of the requirements in Revised Part 417 are inherently not suitable for regulations. Stating these requirements in the form of guidelines would preserve some measure of flexibility in their application, which is necessary to avoid undue burden and a stifling of innovative technology development for an entrepreneurial venture such as Sea Launch.

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11 49 U.S.C. § 70101(a)(7) (emphasis added).

3. Conclusion

The detailed requirements imposed by Revised Subpart F and Revised Part 417 would be costly and burdensome to Sea Launch. They would adversely impact Sea Launch's ability to conduct business as a commercial launch service provider and would limit its ability to compete in the global marketplace. These requirements are also inconsistent with the goal of the CSLA, which is to encourage the U.S. commercial space industry by simplifying and expediting the licensing process. Sea Launch recommends that the requirements be modified to provide for a flexible schedule for data delivery, recognizing the dynamic nature of the launch industry, and that, whenever possible, the detailed requirements of Revised Subpart F and Revised Part 417 be provided as guidelines rather than regulations.

Respectfully submitted,

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